ABSTRACT

Title of the abstract:

Testosterone as the marker of severity of CAD in middle aged Males

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Objectives:

1. To correlate serum testosterone levels in middle aged males with angiographic severity and extent of coronary artery disease.
2. To correlate serum testosterone with-

    a) Flow mediated dilation of brachial artery (BAFMD)

    b) Clinical profile and risk factors of CAD.

Methods:

This prospective cross sectional study included 92 consecutive middle aged male patients admitted for coronary angiogram, in our Department. History and physical examination pertaining to cardiovascular risk factors and cardiovascular system was performed. Patients underwent blood tests, ECG, chest x-ray and echocardiography. Serum total testosterone, sex hormone binding globulin, free and bioavailable testosterone levels were determined. Coronary angiography was done. Severity of CAD was scored according to GENSINI angiographic score. Additionally BAFMD was determined.

The analysis was done on the total population as a single group and also after the division of the population into two groups: Normal CAG (controls) and CAD (cases). Then the patients with CAD were further divided into 3 subgroups according to the Gensini scores (Low score : <24, Moderate score: 24-53, High score: >54) and analysed.

Results:

This study demonstrated a statistically significant negative correlation between severity of CAD and serum total, free and bioavailable testosterone levels. This study also showed that levels of total, free and bioavailable testosterone correlated positively with BAFMD % in a strong and statistically significant manner.

The correlation between testosterone levels and traditional coronary risk factors was also negative but statistically insignificant except for fasting and post prandial sugars. In the CAD group, levels of total, free and bioavailable testosterone varied significantly in the 3 subgroups. Multiple linear regression analysis showed that even after adjusting for traditional risk factors, low serum testosterone was independently associated with severity of CAD. Also after adjusting for all coronary risk factors, low serum testosterone was associated with BAFMD % i.e. endothelial function independently.

Conclusion:

This study showed that there is a statistically significant negative correlation between low serum total, free and bioavailable testosterone and severity of coronary artery disease. There is also a positive correlation between the testosterone levels and BAFMD %- a marker of endothelial function. The correlation between various coronary risk factors and serum testosterone was also found out to be negative. This study showed that serum testosterone is independent risk factor for CAD. It has also shown that testosterone is positively associated with endothelial function independently.

Keywords:

Testosterone, Coronary artery disease, Cardiovascular disease, Coronary heart disease, coronary angiography